



DTCP+
Proposed Technical Elements
November 10, 2010

Elements of DTCP+

- DTLA proposes to add four new capabilities to DTCP, referred to as DTCP+
 - Digital Only Token
 - New “media agnostic” way to carry Content Management Information (CMI)
 - New Copy Count CMI
 - New Remote Access capability
- Significant progress has been made, target completion date 01/30/2011

Digital Only Token

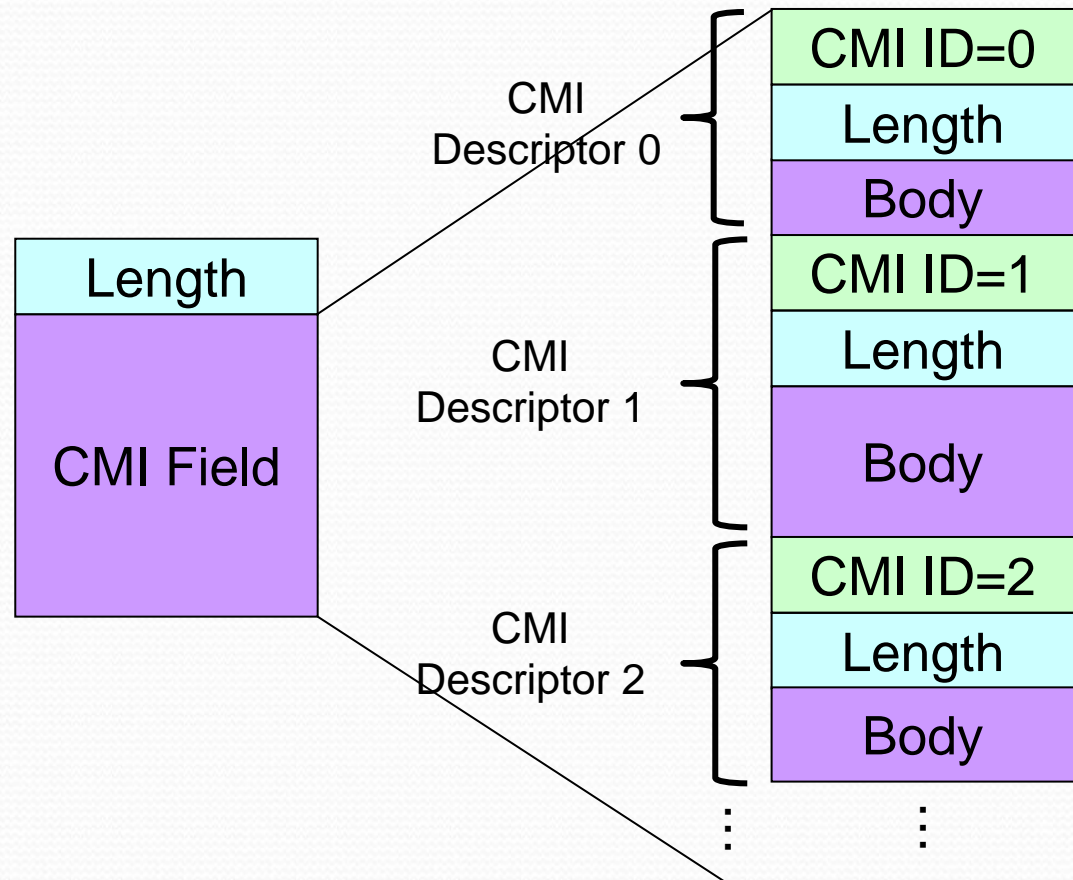
- Applicable to early window release content subject to FCC Waiver Order, and Decrypted AACCS Content.
- Used to signal that DOT-marked content will only be output via protected digital outputs (no analog video outputs or unprotected digital outputs).
- Designed so that existing DTCP sinks cannot decrypt DOT marked content.

CMI Carriage Requirement

- Background
 - “CMI” refers to DTCP Content Management Information such as CCI, Analog Sunset Token, Digital Only Token, APS, etc.
 - Currently DTCP has a Descriptor for MPEG-TS only
 - For DTCP-IP there is an optional media-agnostic Protected Content Packet-Usage Rule (PCP-UR)
 - PCP-UR is not extensible and only 8 bits remain
- Requirement
 - There are many new media formats without CMI carriage support
 - To carry CMI for existing and new media formats, DTLA is creating an extensible media-agnostic carriage of CMI

CMI Carriage Format

- Source devices will compose and transmit along with associated content a CMI Field
- The CMI Field consists of one or more CMI Descriptors. Each CMI Descriptor has an identifying number.
- Sink device will use CMI Descriptor which the sink device supports



CMI Descriptors -- Examples

- CMI Descriptor 1
 - Mandatory for Sinks that support CMI, and optional to Source (we expect nearly all Sources adopting CMI will support this mode).
 - Contains: Retention_Move_mode, Retention_state, EPN, CCI, AST, ICT, APS, DOT, Copy Count
- CMI Descriptor 2
 - Optional for both Source and Sink.
 - Permits only MPEG-TS transport using DTCP_Descriptor.
 - Contains: Copy Count only. For other CCIs, use DTCP_Descriptor.

Copy Count (CC)

- Purpose: enable DTCP to correctly carry and manage content that has been encoded with a Copy Count.
 - E.g., $CC(3) = 3$ copies permitted
- When a copy is made from content marked with Copy Count (CC), the count is decremented by 1 and the copy is remarked as NMC.
 - Examples:
 - Start $CC(5)$: make copy; End: $CC(4)$ and NMC
 - Start $CC(1)$: make copy; End: NMC only
 - Start $CC(3)$: move $CC(2)$ to one sink; End: $CC(1)$ and $CC(2)$

Remote Access Basic Rules

- Source devices may permit remote access to content by 1 and only 1 sink device at any one time.
- Remote access permitted if the device requesting remote access is authenticated with the source device's remote sink registry, and there is no other remotely connected device.
- Content also can be accessed by devices on the local and remote home networks.
- “Daisy chaining” remote access is prohibited.



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Thank you!